DOCUMENT RESUME

ED 281 455 HE 020 359

AUTHOR Parker, Barbara
TITLE Discriminants for Recovery from Decline. ASHE 1987 Annual Meeting Paper.
PUB DATE Feb 87
NOTE 23p.; Paper presented at the Annual Meeting of the Association for the Study of Higher Education (San Diego, CA, February 13-17, 1987).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Change Strategies; *College Administration; Decision Making; *Declining Enrollment; Higher Education; Institutional Characteristics; *Institutional Mission; Problem Solving
IDENTIFIERS *ASHE Annual Meeting

ABSTRACT

Organizational attributes and responses of 56 small to medium-sized colleges that experienced enrollment decline over a 4-year period were investigated. Administrators and faculty members completed surveys that included items concerning institutional agreement on mission and responses to decline. Each college had experienced decline in full-time equivalent enrollments during 1979-1983. It was found that organizations that recovered from decline differed on some attributes from those that stabilized or continued to decline. Using changes of plus or minus 5% to categorize outcomes, 9 organizations were considered to recover, 26 were stabilizing, and 21 continued to decline. Strong agreement on mission was linked to recovery from decline. Seven of the nine recovering colleges expressed strong agreement on mission. The literature on research approaches to the study of decline is reviewed. The relationships between external and internal environmental characteristics, responses to decline, and actual outcomes are identified as research issues. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED281455

DISCRIMINANTS FOR RECOVERY FROM DECLINE

Barbara Parker
Assistant Professor, School of Business
University of Tennessee at Chattanooga
Chattanooga, TN 37403
615-755-4060

Paper prepared for the meeting of the Association for the Study of Higher Education, February, 1987, San Diego.

comments and criticism are welcomed

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Barbara Parker

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

HE 020 359

ASHE

ASSOCIATION
FOR THE
STUDY OF
HIGHER EDUCATION

The George Washington
University
One Dupont Circle, Suite 630
Washington, D.C. 20036-1183
(202) 296-2597

This paper was presented at the Annual Meeting of the Association for the Study of Higher Education held at the San Diego Hilton in San Diego, California, February 14-17, 1987. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

Discriminants for Recovery from Decline:

An unexplored question in the decline literature is: what are the relationships between external and internal environmental characteristics, responses to decline, and actual outcomes? A group of declining organizations were examined for two years following decline by which time nine had made gains of greater than 5% on enrollments. Several variables were entered into analysis as discriminants of recovery, stability, and continuing decline. Differences on responses are minimal, as are differences based on percentage decline and decline pattern. The single variable that discriminates for almost all groups is internal agreement on mission. The implications are discussed.

Researchers have developed many approaches to study decline, and much of this research examines and describes events leading to and following after a period of decline, with secondary emphasis on prescription, for example how to effect a turnaround. A second type of research sifts the descriptive literature to find underlying themes and theories of decline; this has led to a number of useful classification themes. A third type of research uses description and theory to build and test models of decline and responses to decline. The research described here borrows from description, theory, and model testing to examine an issue that is not yet well understood in decline research: what is the relationship between decline, internal environment, responses, and actual recovery from decline?

The paper first describes the research that characterizes decline literature and outlines contributions to the field made by that research. This outline serves as the springboard to describe a project that measured several organizational attributes and responses for 56 organizations that experienced decline over a four year period. A follow-up study examines the relationships among those attributes and responses for two years after the decline period. The results indicate that organizations that recovered from decline differ on some attributes from those that stabilized or continued to decline; these results are discussed in light of existing research.

A primary function for descriptive work is to articulate external and internal events that may be expected to accompany decline. Research of this sort typically examines individual organizations using case studies and/or descriptive statistics (Chaffee, 1984; Hofer, 1980). External events may precipitate decline, for example, a reduced number of traditional college age students probably will be followed by enrollment decline among some colleges and universities. The stress of decline may affect individual morale (Bozeman & Slusher, 1978; Esty, 1984; Whetten, 1981) and turnover (Hirschman, 1970; Levine, 1979), affect group processes by intensifying conflict (Hermann, 1963; Hirschman, 1970), and affect the organization as a whole if individual and group stressors become dysfunctional.

A possible stabilizing mechanism during the crisis of decline may be the organization's mission. Many argue that a shared sense of organizational purpose or mission provides commitment, order, and meaning for organizational members, and that this sense of purpose reduces organizational stress (Clark, 1972; Masland, 1985; Pettigrew, 1979). For example, Hardy's (1986a) study of two Canadian universities revealed that while each had faced similar cutbacks to which they had similarly responded, respondents in the first reported poor morale and erosions of leader credibility, while respondents in the second expressed higher levels of commitment and collegiality. Hardy concludes that the collegial culture created a situation conducive to successful cutback management. This suggests

that recovery may be associated with the presence of a strong shared sense of mission.

On the other hand, there is some possibility that strong mission can also become an organizational albatross. Hannan and Freeman (1984) argue that individual organizations are subject to strong inertial forces that prevent their making radical changes in strategy and structure when threatened. The current culture may be a "constraint on the way further attempts to handle issues of purpose, integration, and commitment are handled" (Pettigrew, 1979, p. 577), making the organization inflexible to external demands for change. The role of mission becomes important because of the feedback link between an organization and its environment. For example, low morale and/or budget cuts in recruiting can have an impact on numbers of students enrolling in the future. Overall, this stream of research makes it possible for managers to identify and organize information and events into those that are external, those that are internal, and those that intersect. In this way, information and events that might otherwise seem complex, turbulent, and unmanageable may be reduced to more nearly manageable proportions.

A second research approach to decline expands on the effort to make information manageable by emphasizing classification systems related to cause of the decline (Ford, 1985; Hardy, 1986b; Zammuto, 1986; Zammuto & Cameron, 1985) or to responses available to organizations that experience decline (Hofer, 1980; Hambrick & Schecter, 1983; Zammuto & Cameron, 1985). In constrast to descriptive literature, this approach is either theoretical in nature, or uses large data bases, e.g., HEGIS and PIMS. These two

approaches are similar in value: they help managers to organize information fairly expeditiously so that managerial effort can be devoted to decline response.

Causes of decline are usually classified as those that are external and those that are internal, for example, bad management (Ford, 1985; Zammuto & Cameron, 1985). With respect to types of responses, researchers largely are in agreement. Two types are described: those that are efficiency oriented, and those that are strategic in nature (Cyert, 1978; Hambrick & Schecter, 1983; Hofer, 1980; Rubin, 1979). For purposes of this paper, the first will be termed "operating" and the second "strategic." Operating responses are believed to be efficiency oriented, take little time to implement or reverse, require little or no group consensus to implement, and are typically within the control of individual managers. An example is to cut departmental costs through attrition.

Strategic responses are differentiated from operating responses because they take longer to implement, require at least minimal consensus (which may explain why they require more time), typically impact on the organization as a whole, and represent changes that are unusual or radical for the organization. These types of change have been described as "those that involve a change in the organization's strategy for competing in the same business and those that call for entering a new business or businesses" (Hofer, 1980, p. 20). In higher education, strategic change is most likely to involve a change in competitive stance, for example, a school might elect to cope with enrollment decline by marketing its product to an adult audience.

In contrast to general agreement on types of responses, there is little agreement with respect to the effect that these types of responses might be expected to have on organizational recovery from decline. The turnaround literature both for the public and the private sector produces different results and opinions. For example, Hambrick and Schecter (1983) argue that efficiency was more successful to turnaround for their sample than was a change in product/market mix, while Rubin (1977) argues that efficiency may be counterproductive for those organizations that have no slack. A study by Zammuto (1983b) illustrates this point; strategic responses were more important to recovery than were additional efficiency measures within established higher education niches. Others argue that organizations that recover from decline do so by combining efficiency with strategic types of moves (Schendel & Patton, 1976; Hughes, 1982; Jick & Murray, 1982). For example, Chaffee's (1982) study of 14 organizations reveals that of the seven organizations that recovered from decline, all had made both internal changes and had created new domains in order to adapt. The unanswered question apparent in the literature is: what types of responses lead to recovery from decline?

The amount of empirical research on decline escalated from the 1970s to the present, but as was indicated above, initial interest was in description and much of that was at the organizational level. We might expect (and do find) that research chronology begins by describing individual organizations, followed by expansion to comparative studies using descriptive statistics, then by large scale use of inferential statistics. The field cannot yet be characterized

as rich in research, but certainly it offers far more information and research opportunity than was available in the 1960s. At this point, we know a good deal more about external and internal events related to decline, and there is some measure of agreement on organizational responses to decline. A reasonable next step in the research is longitudinal research to examine relationships among events, responses, and outcomes. Events to examine include external and internal organizational environment, responses (grouped as strategic and operating types), and outcomes. The latter can be classified in three ways: organizations that recovered, those that stabilized, and those that continued to decline. The next section of this paper describes research methods.

Research Methods

The decline sample is 56 small to medium-sized institutions of higher education. Each had experienced enrollment decline for four years (1979-80 through 1982-83); we measured this factor again in 1983-84 and 1984-85. All data on decline come from full-time equivalent (FTE) fall enrollment figures submitted to the Higher Education General Information Survey (HEGIS). Percent decline for 1979-82 ranged from 2% to 57%, with a mean decline of 12% for the sample. The follow-up on this sample shows a different picture. Institutional enrollments had increased by as much as 11% for one institution, while another had declined 44% from 1982-83 to 1985-85.

About 60% of the institutions (n=34) are small, defined as FTE enrollments of between 200 and 2,500 students; the balance have enrollments of between 2,501 and 10,000. Because of their relatively

small size, enrollment fluctuations of any size may have a significant impact on these institutions. Nevertheless, we followed Zammuto's (1983a) conservative estimate by using changes of +/- 5% to categorize outcomes. On this basis nine organizations could be categorized as recovering (percentage change in enrollment of =>5.1%), 26 were stabilizing (+5% to -5% enrollment change), and those that had continued to decline (enrollment decline of more than -5.1%) numbered 21.

In 1983, qualitative data were collected from the declining institutions via a questionnaire administered by the National Center for Higher Education Management Systems. An average of seven administrators and faculty members per institution responded to questionnaire items that measured several factors important to this study: organizational agreement on mission, responses to decline, and other perceptual variables, for example perceived cause of decline. Data analysis at that time showed that organizational mission and both types of responses shared negative relationships, suggesting that mission might be a mechanism for selective and limited responses. This strong link between agreement on mission and responses suggested they might be important discriminants for recovery. The following discussion describes how those attributes were measured and used in a discriminant analysis.

One possible cause of recovery is agreement on mission. This variable was measured by four questionnaire items as follows:

1) This institution has a special identity, unlike any other in higher education.

2) There is a general sense that this institution has a distinctive purpose to fulfill.

3) The academic programs offered here reflect the mission of the institution.

4) People associated with this institution share a common definition of its mission.

Respondents indicated the extent of their agreement with the item by circling a number on a Likert type scale in which 1=strongly disagree, 3=neither, and 5=strongly agree. A confirmatory factor analysis reveals that these items load (respectively) at .68, .97. .80, and .90 on the same factor; this and their face validity suggest that they do measure organizational mission. Moreover, the items were internally reliable at .91.

Agreement on mission was constructed from averaging responses to the four items for each institution, then classifying the institutional score as more or less in agreement. A response of 3 indicates that the respondent neither agrees nor disagrees with the statement. This suggested that there was a third neutral category in which organizational members neither agree nor disagree (on average) with the questions related to mission. Organizations with a strong agreement on mission equal 27, those who have weak agreement on mission equal 15, and those whose mission is fairly neutral number 14.

Responses to decline were selected as a second discriminant for explaining outcomes, and operating and strategic types were examined in each of two ways. Institutional research officers at the 56 institutions had responded to a questionnaire listing 35 items that

organizations are believed to pursue in response to decline (Mingle, 1982). Twenty five of the events are operating types of responses, for example, cut the library budget or restrict travel, and 10 represent changes in product/market mix, for example, introduce continuing education courses. One of the operating responses had been used nowhere; it was dropped from further consideration.

Raw scores totals were calculated for both types of responses. Operating types of responses ranged from as few as two to as many as 17 of 24. Strategic responses ranged from none to nine out of ten. The raw score totals were used as overall indictors of institutional responses, and were intended to examine the relationship between numbers of responses and outcomes. A more sensitive indicator of responses was developed on the basis of a factor analysis of these two response types. For operating responses, four items accounted for a quarter of the variance in the sample and these items were selected as most representative of operating response. The items are operational in nature, and include restrictions on current expenditures (travel, telephone, and supplies), deferrals on planned expenditures (telephone equipment, maintenance, and renovation), and actual cuts in budgets (library). Similarly (but coincidentally), four other items accounted for 48% of the variance in the sample for strategic responses. These items represented new initiatives, for example "establish new off campus teaching sites" and "develop or increase courses for part-time students." On each index, responses ranged from zero to four.

Another possible discriminant variable may be past experience with decline. Inertial force, for example earlier experience with decline, may be a good predictor of future decline. For this reason,

decline from 1979-82 was used in the equation, as was pattern of that decline. The latter was used because of research that suggests pattern of decline affects responses (need Zammuto reference here). For example, organizations that experience severe and sudden decline are more likely to attend to that decline than are those organizations for which decline is slow and steady. In the latter case, the organization may experience less crisis oriented behavior. Again, following Zammuto (1983a), decline was classified by its pattern: gradual, rapid, or saw toothed from 1979-82. The saw toothed category indicates that while the institution experienced overall decline from 1979 to 1982-83, the decline pattern was erratic.

Analyses and Results

The categorical outcome variable (recovery, stability, decline) was the dependent variable with direct entry of the discriminants described above: responses, mission, decline percentage and pattern of from 79-82. Total responses were used in one analysis, while indexed variables were used in another. In both, the analysis grouped about 54% of the cases correctly. This represents an improvement over chance in classifying these three, but this improvement is not statistically significant. The best discriminant among groups for these analyses is agreement on mission. Because decline pattern and 1979-82 decline were correlated, outcomes were also examined using only one and then only the other. Neither version of the variable substantially altered the results.

Classification results indicated that the stable group was least readily classified. A subsequent analysis of variance indicated that there were no significant differences among the

BEST COPY AVAILABLE

groups, but observation of the results suggested that there might be differences between group pairs. For example, recovering groups had experienced mean decline of about 12% from 1979-82, stabilizers had experienced about 9% decline, and decliners a dip in enrollments of slightly more than 14%. As was indicated earlier, even a small decline in enrollments may be important for organizations that are small but certainly a difference of 5% (between stabilizing and declining groups) would have meaning for those institutions. Second, there were observable differences between decliners and both recovering and stabilizing groups on mission agreement. These observations suggested that stabilizing organizations shared some characteristics with decliners and some with recovering groups, and that these pairwise differences might obscure group differences. This possibility was explored by subsequent pairwise discriminant analyses.

The discriminant analyses to follow produced higher classification results for all groups (recovery/decline, recovery/stability, stability/decline), but these were not significantly better than chance. For example, the best hit ratio for correct classification was 77% for distinguishing between recovering and declining groups, but this does not represent a statistically significant improvement over the 50% chance we would expect. While it is evident that differences among these variables cannot be used to reliably classify group membership, some of the results indicate that there are observable patterns. For example, agreement on mission was significant at .04 to .06 in discriminating between pairs except recovering/stabilizing.

T-tests were then used to distinguish between pairs; the results are displayed in Table 1. These results indicate that there are no significant differences between recovering groups and stabilizing groups, but several differences among the other groups as pairs. For example, declining groups used significantly more operating responses than did stabilizing groups. There are two possible explanations for these results. One is that the observed differences occurred because of chance. A second is that these groups do differ from one another, but not because of the same variables.

A good example is agreement on mission. T-tests reveal that those organizations with strong mission significantly differed on outcome from those with weak mission. Similarly, those organizations that stabilized had significantly higher mission agreement than did declining organizations. What this means is that both recovering and stabilizing institutions have strong missions, and on average declining organizations do not. While the differences between mission for recovering/stabilizing are not significant, the former does have a higher average mission score. The nature of these relationships was explored by crosstabulating results.

As Table 2 indicates, among the 27 organizations whose members expressed a high sense of mission, seven of them were recovering, and only four continued to decline. The bulk of them (16) had stabilized. By contrast, where mission agreement was weak or neutral most of the organizations had continued to decline, and 10 had stabilized. Only one organization with weak mission and one with neutral mission had recovered by 1984-85. A chi-square test of these

results was significant at .01. Overall, these results suggest that agreement on mission does aid recovery and stability over the two year period examined here.

The relationship between recovery and responses was also examined with a crosstabulation of responses with recovery. These results were examined in two ways. A crosstabulation of responses with recovery revealed no statistically significant results; however, an examination of mean scores suggests a pattern. Recovering organizations on average pursued fewer operating responses and more strategic responses than did declining organizations. An analysis of variance for all three groups did not reveal differences in responses among the groups.

Strategic responses did not discriminate between groups, nor did operating responses (with the exception of differences between decliners and stabilizers), but on average recovering institutions pursued one more strategic response and one less operating response than did declining groups. Decline patterns showed no differences that can be explained by group membership.

A third item of interest for this sample was the extent to which organizational participants believed decline to be externally or internally caused. An adaptation of attribution theory to decline management suggests that perception of cause predicts responses (Ford, 1985). These relationships were examined for this sample, revealing that there is a significant relationship between operating responses and membership in the stabilizing group when we control for a perception that decline is internally caused. This may suggest that some part of stability is attributable to matching internal

responses to perceived internal cause for the decline. Because of the practical value and theoretical interest in matching responses to their causes (Zammuto, 1986; Zammuto & Cameron, 1985) this line of inquiry may prove fruitful for future research. There was no indication that perceived external cause would produce more strategic types of responses for these organizations.

Overall, these data indicate that for this sample neither type of response helped to discriminate between those organizations that are recovering/stabilizing/declining. In fact, the only statistically significant difference on responses is that between declining/stabilizing groups which reveals that declining groups pursue significantly more operating responses than do stabilizing organizations. Similarly, neither history nor decline pattern are discriminant variables. The single discriminant among and between these groups is agreement on organizational mission.

Discussion

These results appear to confirm that strong agreement on mission is an asset for recovery from decline. It was shown that seven of the nine recovering organizations also expressed strong agreement on mission. Conversely, the absence of strong mission (whether it is measured as neutral or weak mission) is most often found among those organizations that stabilized or faced further decline. However, as is indicated in Table 1, there are no statistically significant differences on mission between organizations that recovered and those that stabilized. This

suggests that while a strong sense of mission may help an organization to recover (whether that is defined as growth or stability), the strength of that mission does not distinguish between those organizations that recover and those that simply stabilize.

These results appear to refute recent evidence that suggests strong mission can restrain an organization's ability to cope with an altered environment (Byrne, 1986), or that the inertia of mission might constrain future choice (Pettigrew, 1979). Instead, these results suggest that strong internal agreement on mission is a stabilizing force for the organization and its absence appears to limit recovery or prolong decline.

Efforts to distinguish between stabilizing and decline groups revealed little that is statistically significant; stabilizing groups pursued less of each type of response than did the other groups, but these differences are small.

These results indicate that the single most important aspect of recovery from enrollment decline and/or enrollment stability is the internal environment of the organization. While we might expect that an organization's responses to decline will be most important to recovery, these results indicate that it is not what the organization does but rather what it is that predicts outcomes. This suggests that future research with this and other samples should include a more sensitive analysis of internal dimensions of mission and organizational culture.

TABLE 1

T-TEST OF DIFFERENCES ON PAIRED GROUP MEANS:

	GROUP PAIRINGS*		
	1,2	1,3	2,3*
operating responses	no	no	.04[1]
strategic responses	no	no	no
decline pattern	no	no	no
percent decline 79-82	.06[2]	no	.07[3]
agreement on mission	.04[4]	no	.06[5]

WHERE: 1=recovering organizations

2=declining organizations

3=stabilizing organizations

AND

1-5=indicate statistical signficance interpreted as:

[1]=declining used more operating responses than did stablizers

[2]=recovers had declined on average 2% less than decliners

[3]=stabilizers had less average decline than decliners

[4]=recovers had higher agreement on mission than did decliners

[5]=stabilizers had higher agreement on mission than decliners

TABLE 2

	AGREEMENT ON MISSION			
	STRONG	NEUTRAL	WEAK	
GROWTH STATE:				
RECOVER	7	1	1	9
STABILIZE	16	4	6	26
DECLINE	4	9	8	21
	27	14	15	56

REFERENCES

Bozeman, B., & Slusher, E.A. (1979). Scarcity and environmental stress in public organizations: A conjectural essay. Administration & Society, 11, 335-355.

Byrne, J.A. (1986, January 20). Business fads: What's in--and out. Business Week, 52-61.

Chaffee, E. E. (1982). Case studies in college strategy. Boulder, CO: National Center for Higher Education Management Systems.

Chaffee, E.E. (1984). Successful strategic management in small private colleges. Journal of Higher Education, 55, 212-241.

Clark, B.R. (1972). The organizational saga in higher education. Administrative Science Quarterly, 17, 179-184.

Cyert, R.M. (1978). The management of universities of constant and decreasing size. Public Administration Review, 38, 344-349.

Esty, K.C. (1984). Job distress in contracting organizations: When smaller is not beautiful. Unpublished doctoral dissertation, Boston University.

Ford, J.D. (1985). The effects of causal attribution on decision makers' responses to performance downturns. Academy of Management Review, 10, 770-786.

Hambrick, D.C., & Schecter, S.M. (1983). Turnaround strategies for mature industrial-product business units. Academy of Management Journal, 26, 231-248.

Hannan, M.T., & Freeman, J. (1984). Structural inertia and organizational change. American Sociological Review, 49, 149-164.

Hardy, C. (1986a). What? Where? How? Using content, context, and process to manage university cutbacks. Unpublished manuscript, McGill University, Montreal.

Hardy, C. (1986b, February). Universities and decline: Operating, strategic and political turnaround. Paper presented at the meeting of the Association for the Study of Higher Education, San Antonio.

Hermann, C.F. (1963). Some consequences of crisis which limit the viability of organizations. Administrative Science Quarterly, 8, 61-82.

Hirschman, A.O. (1970). Exit, voice, and loyalty. Cambridge, MA: Harvard University Press.

Hofer, C.W. (1980). Turnaround strategies. Journal of Business Strategy, 1, 19-31.

Hughes, K. (1982). Corporate response to declining rates of growth. Lexington, MA: Lexington Books.

Jick, T.D., & Murray, V.V. (1982). The management of hard times: Budget cutbacks on public sector organizations. Organization Studies, 3, 141-169.

Levine, C.H. (1979). More on cutback management: Hard questions for hard times. Public Administration Review, 39, 179-183.

Masland, A.T. (1985). Organizational culture in the study of higher education. Review of Higher Education, 8, 157-168.

Mingle, J.R. (1982). Redirecting higher education in a time of budget reduction. Issues in Higher Education, 18.

Pettigrew, A.M. (1979). On studying organizational cultures. Administrative Science Quarterly, 24, 570-81.

Rubin, I.S. (1977). Universities in stress: Decision making under conditions of reduced resources. Social Science Quarterly, 58, 242-254.

Rubin, I. (1979). Retrenchment, loose structure and adaptability in the University. Sociology of Education, 52, 211-22.

Schendel, D.E., & Patton, G.R. (1976). Corporate stagnation and turnaround. Journal of Economics and Business, 28, 236-241.

Whetten, D.A. (1981). Organizational responses to scarcity: Exploring the obstacles to innovative approaches to retrenchment in education. Educational Administration Quarterly, 17, 80-97.

Zammuto, R.F. (1982). Organizational correlates of decline: Some preliminary analyses. Boulder, CO: National Center for Higher Education Management Systems.

Zammuto, R.F. (1983a). Growth, stability, and decline in American college and university enrollments. Educational Administration Quarterly, 19, 83-99.

Zammuto, R.F. (1983b). Three propositions on organizational growth and decline. In K.E. Chung (ed.). Proceedings of the Forty-Third Annual Meeting of the Academy of Management, pp. 271-275. Dallas.

Zammuto, R.F. (1986). Managing decline in American higher education. In J.C. Smart (Ed.), Higher education: Handbook on theory and research, 2, pp. 43-84. New York: Agathon Press.

Zammuto, R.F., & Cameron, K.S. (1985). Environmental decline and organizational response. Research in Organizational Behavior, 7, 223-262.